

Exhibit D



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What Is BIG-IP?

Updated 1 year ago | Originally posted January 19, 2017 by [Chase Abbott](#) • [F5 \(/s/profile/0051T000008twwFQAQ\)](#)

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DevCentralBasics

tl;dr - BIG-IP is a collection of hardware platforms and software solutions providing services focused on security, reliability, and performance.

F5's BIG-IP is a family of products covering software and hardware designed around application availability, access control, and security solutions. That's right, the BIG-IP name is interchangeable between F5's software and hardware application delivery controller and security products. This is different from BIG-IQ, a suite of management and orchestration tools, and F5 Silverline, F5's SaaS platform. When people refer to BIG-IP this can mean a single software module in BIG-IP's software family or it could mean a hardware chassis sitting in your datacenter. This can sometimes cause a lot of confusion when people say they have question about "BIG-IP" but we'll break it down here to reduce the confusion.

BIG-IP Software

BIG-IP software products are licensed modules that run on top of F5's Traffic Management Operation System® (TMOS). This custom operating system is an event driven operating system designed specifically to inspect network and application traffic and make real-time decisions based on the configurations you provide. The BIG-IP software can run on hardware or can run in virtualized environments. Virtualized systems provide BIG-IP software functionality where hardware implementations are unavailable, including public clouds and various managed infrastructures where rack space is a critical commodity.

BIG-IP Primary Software Modules

- **BIG-IP Local Traffic Manager (LTM)** - Central to F5's full traffic proxy functionality, LTM provides the platform for creating virtual servers, performance, service, protocol, authentication, and security profiles to define and shape your application traffic. Most other modules in the BIG-IP family use LTM as a foundation for enhanced services.
- **BIG-IP DNS** - Formerly Global Traffic Manager, BIG-IP DNS provides similar security and load balancing features that LTM offers but at a global/multi-site scale. BIG-IP DNS offers services to distribute and secure DNS traffic advertising your application namespaces.
- **BIG-IP Access Policy Manager (APM)** - Provides federation, SSO, application access policies, and secure web tunneling. Allow granular access to your various applications, virtualized desktop environments, or just go full VPN tunnel.
- **Secure Web Gateway Services (SWG)** - Paired with APM, SWG enables access policy control for internet usage. You can allow, block, verify and log traffic with APM's access policies allowing flexibility around your acceptable internet and public web application use. You know.... contractors and interns shouldn't use Facebook but you're not going to be responsible why the CFO can't access their cat pics.
- **BIG-IP Application Security Manager (ASM)** - This is F5's web application firewall (WAF) solution. Traditional firewalls and layer 3 protection don't understand the complexities of many web applications. ASM allows you to tailor acceptable and expected application behavior on a per application basis. Zero day, DoS, and click fraud all rely on traditional security device's inability to protect unique application needs; ASM fills the gap between traditional firewall and tailored granular application protection.
- **BIG-IP Advanced Firewall Manager (AFM)** - AFM is designed to reduce the hardware and extra hops required when ADC's are paired with traditional firewalls. Operating at L3/L4, AFM helps protect traffic destined for your data center. Paired with ASM, you can implement protection services at L3 - L7 for a full ADC and Security solution in one box or virtual environment.

BIG-IP Hardware

BIG-IP hardware offers several types of purpose-built custom solutions, all designed in-house by our fantastic engineers; no white boxes here. BIG-IP hardware is offered via series releases, each offering improvements for performance and features determined by customer requirements.

These may include increased port capacity, traffic throughput, CPU performance, FPGA feature functionality for hardware-based scalability, and virtualization capabilities. There are two primary variations of BIG-IP hardware, single chassis design, or VIPRION modular designs. Each offer unique advantages for internal and collocated infrastructures. Updates in processor architecture, FPGA, and interface performance gains are common so we recommend referring to F5's hardware page (<https://f5.com/products/deployment-methods/hardware>) for more information.

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Leonardo Souza (/s/profile/0051T0000008ud3XQAAQ)

3 years ago

"There are two primary variations of BIG-IP hardware, single chassis design, or VIPRION modular designs."

I don't think VIPRION is considered to be in the BIG-IP hardware family. However, iSeries is branded as BIG-IP hardware.

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